Name: Date:

PCW_09_22 Coordinate transformations v3

Question 1

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 2 \cdot f\left[\frac{x+8}{6}\right] - 3$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow (6a - 8 \;,\; 2b - 3)$$

Question 2

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 2 \cdot f[9x + 5] + 7$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a-5}{9} \;,\; 2b + 7\right)$$

Question 3

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[4x - 3] + 9}{7}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a+3}{4} \;,\; \frac{b+9}{7}\right)$$

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Question 4

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f\left[\frac{x}{6}+4\right]-9}{8}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \to \left(6\,(a-4)\;,\;\frac{b-9}{8}\right)$$

Question 5

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 7\cdot\left(f\left[\frac{x-3}{8}\right]+5\right)$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \to (8a+3\;,\;7\,(b+5))$$

Question 6

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[2\,(x-7)]}{4}-5$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \to \left(\frac{a}{2}+7\;,\;\frac{b}{4}-5\right)$$